ગુજરાત ગૌણ સેવા પસંદગી મંડળ

બ્લોક નં. ૨, પહેલો માળ, કર્મયોગી ભવન, સેક્ટર – ૧૦, ગાંધીનગર

જાહેરાત ક્રમાંકઃ ૨૧૭/૨૦૨૩૨૪ ની વર્ક આસીસ્ટન્ટ વર્ગ–૩ ની સ્પર્ધાત્મક પરીક્ષાનો અભ્યાસક્રમ

(વેબસાઇટ એડ્રેસ : https://ojas.gujarat.gov.in **અને** https://gsssb.gujarat.gov.in**)**

ગુજરાત ગૌણ સેવા પસંદગી મંડળ, ગાંધીનગરની **જાહેરાત ક્રમાંક : ૨૧૭/૨૦૨૩૨૪** દ્વારા નર્મદા, જળસંપતિ, પાણી પુરવઠા અને કલ્પસર વિભાગ, ગાંધીનગરની **વર્ક આસીસ્ટન્ટ, વર્ગ–૩ સંવર્ગની જગ્યાઓ** સીધી ભરતીથી ભરવા માટે ઉમેદવારો પાસેથી ઓનલાઈન એપ્લીકેશન મંગાવવામાં આવેલ છે. સદર સંવર્ગની જગ્યાઓ ભરવા માટે MCQ - CBRT (Computer Based Response Test) પદ્ધતિથી પરીક્ષાનું આયોજન કરવાનો નિર્ણય લીધેલ છે, જેની સબંધિત ઉમેદવારોએ નોંધ લેવી.

સદર સંવર્ગની પરીક્ષાનો વિગતવાર અભ્યાસક્રમ આ સાથે સામેલ છે.

તારીખ: ૨૦મી જાન્યુઆરી, ૨૦૨૪
ગાંધીનગર.

હસમુખ પટેલ
સચિવ

ADVERTISEMENT NO. 217/202324, Work Assistant (NWRWS & K)

Total Questions	210
Total Marks	210
No. of Options	4 (A,B,C,D)
Mark per question	1 (For right answer)
Negative Marking	Yes
Negative Mark per question	1/4 (0.25) (For wrong answer)
No. of Languages	As per below table

PART		Topic & Syllabus	Mark	Question	Language
A		**Reasoning & Data Interpretation**	30	30	Gujarati
	1	Problems on Ages			
	2	Venn Diagram			
	3	Visual reasoning			
	4	Blood relation			
	5	Arithmetic reasoning			
	6	Data interpretation (charts, graphs, tables)			
	7	Data sufficiency			
A		**Quantitative Aptitude**	30	30	Gujarati
	1	Number Systems			
	2	Simplification and Algebra			
	3	Arithmetic and Geometric Progression			
	4	Average			
	5	Percentage			
	6	Profit-Loss			
	7	Ration and Proportion			
	8	Partnership			
	9	Time and Work			
	10	Time, Speed and Distance			
	11	Work, Wages and chain rule			
B		**Constitution of India**	10	10	Gujarati
	1	Preamble of the Constitution			
	2	Fundamental rights			
	3	Directive principles of state policy			
	4	Fundamental Duty			
	5	Power, role and responsibility of President, vice president and governor			
	6	Parliamentary system			

	7	Amendment of Indian constitution , emergency provisions in Indian constitution			
	8	Centre – State Government and their relation			
	9	Judicial System of Indian Constitution			
	10	Constitutional body			

B	**Current Affairs**		10	10	Gujarati
	1	Current events of state, national and international importance			

B	**Comprehension**		10	10	
	1	Comprehension in Gujarati	5	5	Gujarati
	2	Comprehension in English	5	5	English
		To assess comprehension, interpretation and inference skills *A paragraph given with set of question on the basis of paragraph* *Or statement and assertion type question can be asked*			

B	**Questions and Its Applications related to Technical Qualification**	120	120	English & Gujarati

1 **Construction Materials**
Construction materials: Stone, Lime, Glass, Plastics, Steel, FRP, Ceramics, Aluminum, Fly Ash, Basic Admixtures, Timber, Bricks and Aggregates: Classification, properties and selection criteria, IS specifications.

2 **Solid Mechanics**
Elastic constants, Stress, plane stress, Strains, plane strain, Mohr's circle of stress and strain, Principal Stresses, Bending, Shear and Torsion.
Forces & force systems, Centre of Gravity, Moment of Inertia, Friction, Simple lifting machine.

3 **Structural Mechanics**
Basics of strength of materials, Types of stresses and strains, Bending moments and shear force, concept of bending and shear stresses; Analysis of determinate structures; Trusses, beams, plane frames;
Slope and Deflection of determinate beam, Column and Strut.

4 **Surveying and Advance Surveying**
Classification of surveys, various methodologies, instruments (Transit Theodolite, Digital Theodolite, Levelling Staff, Tacheometer, Total Station and its accessories, other misc. equipments, etc), analysis of measuremnet of distances, elevation and directions; Field Astronomy, Global Positioning System; Map preparation; Photogrammetry; Remote sensing concepts; Survey Layout for culverts, canals, bridges, road/railway alignment and buildings, Setting out of curves.

5 **Soil Mechanics & Foundation Engg.**

Soil Mechanics: Soil exploration - planning & methods, Properties of soil, classification, various tests and interrelationships; Permeability & Seepage, Compressibility, consolidation and Shearing resistance, Earth pressure theories and stress distribution in soil; Properties and uses of geo- synthetics.

Foundation Engg: Types of foundations & selection criteria, bearing capacity, shallow & deep foundations; Dams and Earth retaining structures: types, Surveying and Geology:

6 **Concrete Technology**

Cement, Aggregates and Water; Concrete, Concrete Mix Design and Testing of Concrete, Curing, Quality Control of Concrete; Chemical Admixture, Special Concrete and Extreme Weather concreting

7 **Building Construction**

Brick and stone masonry walls, types of masonry, cavity walls, reinforced brickwork, building services, detailing of floors, roofs, ceilings, stairs, doors and windows, finishing, formwork, ground water control techniques, cofferdams, cassion, functional planning of building, orientations of buildings, low cost housings.

8 **Fluid Mechanics & Hydraulics**

(a) Fluid Mechanics, Open Channel Flow, Pipe Flow:

Fluid properties; Fluid dynamics including flow kinematics and measurements; Flow net; Viscosity, Boundary layer and control, Flow controls. Hydraulic jump; Surges;
Hydrostatics, Hydraulic coefficient, Notches and Weirs, Flow through pipe and open channel

(b) Hydraulic Machines and Hydro power:

Various pumps, Air vessels, Hydraulic turbines – types, classifications

9 **Hydrology and Water Resource Engg.**

Hydrology: Hydrological cycle, Ground water hydrology, Well hydrology and related data analysis; River morphology; Flood, drought and their management; Capacity of Reservoirs.
Water Resources Engineering : Multipurpose uses of Water, Irrigation systems, water demand assessment; Resources - storages and their yields; Water logging, canal and drainage design, Gravity dams, falls, weirs, Energy dissipaters, barrage Distribution works, Cross drainage works and head-works; Concepts in canal design, construction & maintenance; River training, measurement and analysis of rainfall. Water shed Development, Water harvesting structure

10 **Irrigation Engineering:**

Water requirements of crops, Irrigation methods, Water Logging and Land reclamation, Reservior Planning, Dams and Spillway, Evaluation of Irrigation Projects.

11 **Design of Structures**

RCC Design: Limit state design for bending, shear, axial compression and combined forces; Design of beams, Slabs, Lintels, Foundations, Retaining walls, Tanks, Staircases; Design of Masonry Structure.

Steel Design: Principles of Limit State Methods, Design of tension and compression members, Design of beams and beam column connections, built-up sections, Girders, Industrial roofs, Lacing, Battening, Purlin and simple Beam design, Truss design

12 Construction Practice, Planning & Management

Construction - Planning, Equipment, Site investigation and Management, Construction technology - Precast and Pre-fabricating technology, formwork, Project Management tools and network analysis for different Types of works; Tendering Process and Contract Management, Environment clearance, Quality Control, Productivity, Operation Cost; Labour safety and welfare, maintenance and repair, Electrical layouts of simple Buildings, Heat Ventilation and air conditioning, Fire safety, Quality control and monitoring of construction projects.

13 **Estimation, costing and valuation**

Fundamentals of Estimating and Costing, Approximate Estimates, Detailed Estimate, Estimate for Civil Engineering Works, Rate Analysis, Specification of various items

14 **Transportation Engineering**

Different modes of transport, Road materials, Road Drainage system, Types of pavements - Flexible & Rigid pavement.
Bridges - Fundamentals of Bridge Engineering , Bridge Site Investigations and Planning, Bridge Hydrology, Standards of Loadings for Bridge Design, Different Types of Bridges, Bridge Superstructure, Bearings and Substructure Bridge Foundations, Bridge Approaches, River Training Work & Protection Work, Methods of Bridge Construction, Inspection, maintenance & Repair of Bridges, Bridge Architecture.

14 **Civil Engineering in Gujarat-**

Important Buildings, Monuments and Construction- Historical as well as Modern. Important Dams & Reservoir - Its Storage, Catchment and Command Area, Technical features and important characteristics, features of Sardar Sarovar Project

15 **Current Trends and Recent Advancements in the Above Fields.**